NSPW Responses to Agency Comments
Human Health Risk Assessment
Draft Remedial Investigation Report
Ashland/NSP Lakefront Superfund Site

COMMENTS ON HHRA

General Comments

1. Was sediment, fish and soil data from SEH risk assessments included in this HHRA? Data from these documents should also be included in the HHRA, especially since only 2 sediment samples were evaluated in the HHRA.

Response

The results of previous investigations, including SEH data, were included in the HHRA, as appropriate.

2. The HHRA does not appear to address the exposure risk to free product found at several locations. Therefore, it is assumed that removal of the free product will be addressed in the Remedial Action Objectives (RAOs) and Feasibility Study (FS).

Response

The potential for adverse effects to ecological receptors from releases of contaminants from subsurface sediments (including contaminants in sheens) is discussed in Section 6.2.14 of the BERA. In addition, the effect of "free product" releases as a source to sediment is addressed indirectly since Exposure Point Concentrations (EPCs) for sediment were based upon measurement of VOCs and SVOCs in that sediment. Any release of "free product" that impacted sediments at the Site would have been accounted for in these measurements.

The removal of free product will be addressed in the FS.

3. The use of a 95% Upper Confidence Limit (UCL) can dilute out the contaminant concentrations, resulting in an underestimation of risk.

Response

The use of a 95%UCL as a conservative estimate of the average concentration that receptors may expose to over time is consistent with the current USEPA guidance and the approach presented in the approved work plan.

4. Samples above screening levels even if below background should be retained in the HHRA per U.S. EPA (2002) guidance (*Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites,* EPA-540-R-01-003).

Response

The HHRA report will be revised to clarify that although background levels were identified in the work plan as one of the screening criteria for identifying chemicals of potential concern, no chemicals were excluded from the HHRA based on background comparison due to the lack of relevant background levels.

5. Human health RAOs presented in the RI/FS (Appendix A) will need to be adjusted after the HHRA is corrected.

Response

Comment noted. RAOs will be revised based on the final HHRA.

6. The report should include a list of all parameters analyzed for each matrix. Without a list in the document, a reader is left wondering what contaminants each sample was analyzed for when faced only with a table of detects.

Response

Information regarding parameters that were analyzed for in each matrix is presented in the draft RI report in Table 2-6 for soil, sediment and groundwater, and Table 2-7 for vapor.

7. Were calculations made for Adult consumers of fish only? Also, considering the detection of Chemical of Potential Concern (COPCs) above health-based concentrations some discussion should be included about how well the calculations actually reflect the local consumption pattern particularly as it relates to smelt. Fish are often consumed in large amounts (200 to 300 grams per meal) very frequently in season and frozen for meals during the year. Great Lakes Indian Fish and Wildlife Commission have done several fish consumption studies and could supply more information.

Response

Risks potentially associated with ingestion of locally-caught fish were calculated for adult subsistence fishers. The fish ingestion rate used in the HHRA for characterizing the reasonable maximum exposure scenario (81 grams per meal and 350 meals per year) was based on the median intake value recommended by USEPA for the Native American subsistence populations, based on data collected from 94 Native American Communities

in Alaska. Therefore, this value is expected to be protective of the subsistence fisher populations near the Site.

For the purpose of this HHRA, fish data were collected from species considered to be consumed on a consistent basis by the local communities. In addition, as indicated in Section 2.2.5 of the report, the samples were prepared using the following methods that corresponded to the way these fin fish is consumed:

- *Rainbow smelt were prepared as for frying; i.e., their heads and entrails removed.*
- *Walleye were filleted with skin removed.*
- *Shorthead redhorse were prepared as for smoking and pickling; i.e., only the head and entrails were removed.*

8. Some of the individual parameters exceed health-based concentrations in the fish at the reference sites yet this is not discussed in the narrative (Table 18). This issue deserves more discussion as to where these samples were taken and the information on site related chemicals being detected in the tissue above health-based concentrations.

Response

Discussion regarding locations where fish concentrations exceeded health-based concentrations will be incorporated into the revised report.

9. All Tables – ensure all units are consistent. For example, Table 18 lists range of detections in mg/Kg while limits are in ug/Kg.

Response

The report will be revised to ensure that consistent units are used in all tables.

10. The concluding quantification of the risk of fish consumption was on the border of EPA acceptability at 1×10^{-4}. Therefore, the narrative needs more information explaining why this isn't considered an unreasonable risk. Also, the summary table of risk calculations for finfish is missing though it is listed in the **Tables list as Table 32.**

Response

The report will be revised to present additional discussion regarding risks potentially associated with the fish ingestion pathway, as suggested.

Risk calculations for fish consumption are presented on Tables 29a and 29b of Appendix D for carcinogenic and noncarcinogenic effects, respectively. The report will be revised to present a summary of risk calculations for fish consumption on Table 32.

11. The report needs an executive summary and introductory tables that clearly summarize: 1) chemicals of potential concern; 2) the receptors being examined; 3) exposure scenarios; and 4) the risk findings of the draft HHRA report. The summarized Reasonable Maximum Exposure (RME) risk table on Page 5-2 did not include health risk estimates for surface water, even though this pathway was evaluated as part of the risk assessment process.

Response

Requested information (i.e., an executive summary and introductory tables) is presented in Section 7 of the RI report.

No COPCs were identified in surface water (Table 16). Therefore, risk estimates for surface water are not presented on the summary table on page 5-2.

12. Regarding the Data Review Protocol (Section 2.1, Page 2-1), the draft HHRA report needs to comprehensively describe all the environmental investigations and related reports that provided data used in the document. The narrative also needs to include a description of which data were used, which were not used, and why. As mentioned above, it is evident that not all environmental data from prior investigations were included in the draft HHRA report, which is a shortcoming of the risk assessment.

Response

As suggested, the report will be revised to clarify data used in the development of the HHRA. As indicated in Response 1, the results of previous investigations, including SEH data, were included in the HHRA, as appropriate. This will be made explicit in the revised HHRA.

13. The Risk Characterization Results (Page 5-1) implies that a cancer risk of 1×10^{-4} falls within an acceptable range. However, the draft HHRA report described unacceptable cancer and non-cancer risks only for residential exposures to soils and construction worker exposure to soils, the RME table on page 5-2 shows an unacceptable cancer risk (1×10^{-4}) for subsistence fishers, but this was not discussed in the narrative. The supporting summary table (Table 32) for subsistence fishers is missing in the document, but the supporting risk calculations for subsistence fishers also report an unacceptable risk of 1.29×10^{-4} (Attachment D, Table 29a). Additionally, there is a

variation of 0 to 2 significant digits used amongst the calculations in risk tables and there should be consistency throughout the report. For example, with the above referenced Table 29a, risk calculations are reported with 2 significant digits, but when described in the summary table there are 0 significant digits. A discrepancy with the number of significant digits was also noted for the various CTE tables summarizing and detailing the risk calculations for the residential soil risks (Table on page 5-5, Table 33 and Attachment E, Table 1a). This needs to be clarified.

For the CTE risk table on page 5-5, there were notable discrepancies of the calculated risks for both Resident and Construction Worker with the supporting documentation in Table 33. On page 5-5 the Resident cancer risk and hazard index was 5×10^{-4} and 1, respectively, but on Table 33 these were reported as 1×10^{-4} and 4. For Construction Worker, on page 5-5, the hazard index was reported as 0.5, but on Table 34 it was reported as 1.36. This needs to be clarified.

Response

The report will be revised to ensure that (1) consistent significant figures are applied throughout the report; and (2) the calculated risks are correctly presented in the summary tables.

14. The tables appearing at the end of the report narrative were not always properly or accurately labeled, and some tables were missing (*Table 22 – Recreational Adolescent – Surface Soil, Table 32, Fisher Finfish*) in both the hard copy and electronic version of the document. Some tables did not clearly list the media being evaluated (Table 28 – Industrial Worker Risk Summary). When comparing the narrative of the draft HHRA with corresponding portions of the draft RI report, the important narratives present in the draft RI report were absent in the draft HHRA report, particularly regarding the Surface Water section (1.3.3). This needs to be clarified.

Response

The tables will be rechecked to ensure they are labeled correctly. In addition, the text of the draft HHRA will be revised to be consistent with Section 7 of the RI report.

15. As part of the HHRA review, we needed to examine 2005 data referenced in the appendices of the draft RI report. Environmental sampling data was poorly presented and summarized in the RI report, which inhibits HHRA readers from locating and reviewing data and, as a result, difficult to determine the degree and extent of contamination. Portions of the appendices in the RI report were not well organized, with some important data difficult to read or missing. For media-specific data that was collected in 2005 and

reported in the draft RI report, there were no media-specific tables that clearly summarized the data. It was difficult to extract this information from the "Statistical Data Summary" tables. For some data, we could not locate the summary data, supporting documentation, nor the laboratory reports in the draft RI report. For example, we were unable to locate the analytical results for sediments in Appendix E4 of the draft RI report, as well as the laboratory data sheets and chain-of-custody reports.

Response

The appendices of the revised draft RI report will be reformatted for ease of reference. As discussed at the October 12, 2006 meeting between NSPW and the Agency, presentation of the historic data in the revised draft RI report will also be reformatted. The data summaries will be augmented with specific compound tables comparing concentrations in various media to regulatory standards. The actual contaminants that will comprise the parameters to be included will be decided between USEPA and NSPW prior to revising the draft RI report.

16. Despite efforts described under the draft RI report to characterize worst case surface water impacts from affected sediments, the draft HHRA report did not use all previously collected surface water data, as a result, did not fully assess the human health risks of surface water. The narrative section should address the issue in detail, but was not done. Additionally, the Site Description Section narrative for Surface Water (1.3.3) was missing much of the relevant discussion that appeared in the corresponding section of the draft RI report.

Evaluating exposures to contaminated surface water has been challenging at the site due to a limited number of samples collected when natural factors caused the release of tar slicks. On November 15, 2005, during RI sampling activities, surface water samples were collected shortly after a tar slick was reported and photographed by a citizen, however, no slicks were observed by sample collectors and the subsequent data does not indicate notable surface water impacts. The draft HHRA report does discuss a single surface water sample collected during a "high wave" event in 1998 by SEH, which had high levels of PAHs. While the draft HHRA report notes a shortcoming with this water sample, the SEH surface water data is apparently rejected from use in the HHRA as it does not appear in any of the risk calculations.
Despite the limitations of this single sample and difficulties of collecting data that documents these events, the draft HHRA report should not dismiss or ignore a number of cases reporting these slicks without declaring the absence of the data as a shortcoming of the report, particularly when this is contrary to the findings of the 1998 SEH HHRA report. The 1998 SEH report calculated unacceptable levels of current and future health risks for workers, trespassers, and people engaged in recreational activities on the site.

The draft HHRA report should have discussed each component of the 1998 HHRA and where it differed with the findings, particularly regarding surface water. Simply excluding the 1998 surface water information and data from use in the risk assessment and risk calculations is not acceptable. Since this exposure pathway poses one of the greatest potential health risks at the site, the draft HHRA report needs a thorough narrative and evaluation on this media and exposure pathway, including the possible incorporation of surface water data that was left out.

The draft HHRA report excluded certain data, used data inappropriately, or did not include important factors in calculating risks. Additionally, the report did not differentiate between current and future health risks posed by contamination at the site. This needs to be clarified.

Response

The report will be revised to present relevant discussion regarding available surface water data, including data presented in the 1998 SHE HHRA report. In addition, the report will include a qualitative evaluation of risks potentially posed by tar slicks in surface water.

17. Despite the large number of sediment samples that have been collected over a number of years at the site, the draft HHRA report relied on only 2 sediment samples in calculating health risks. When looking at the draft RI report for sediment data that was collected in 2005, we were unable to find media-specific tables providing either detailed or summarized data. We were also unable to find data for these two samples from the "Statistical Data Summary" tables. And we could not locate in the draft RI report the analytical results for sediments in Appendix E4, as well as the laboratory data sheets and chain-of-custody reports. This needs to be clarified.

The draft HHRA report introduced new criteria that excludes important sediment data from being used in risk calculations of the Recreational scenarios and underestimates the health risks. While not addressed previously nor in the RI Work Plan, for the Recreational Scenario the draft HHRA report selected sediment data that only met the criteria of "between 0.0 to0.5 foot in depth and 3 feet or less of surface water...based on wading activities, where it was assumed that receptors would not dig into the sediment." This selection criteria was also not previously considered nor proposed in the RI work plan. Since no on-site sediment data were used in evaluating the recreational exposure scenario, it can be inferred that no on-site sediment samples meet the criteria and raises questions about the relevance of this selection criteria. Additionally, assuming that "receptors would not dig" counters several anecdotal reports of visitors to the park who waded into the water to collect drift wood stuck deep in sediments. Finally, this selection

criteria excludes at least 9 sediment samples previously collected by URS that were in 3 feet or less of water and were collected between 0.0 to 2.0 feet in depth, which is relevant to this exposure scenario.

In calculating the risks for the recreational exposure scenario, two sediment samples (NSP-SE-SS-14 & 2300N-3200E) were collected from locations that were over 600 feet east of the site boundaries and even further from the closest known areas of impacted sediments. It clearly appears that these two sediment samples were collected to provide background data on sediments. The use of only two background sediment samples in calculating health risks to impacted on-site sediments is unacceptable. Please use the existing on-site sediment data in the HHRA.

Response

The analytical results, laboratory data sheets and chain-of-custody reports for sediment samples will be presented in the revised RI report.

Potential risks following exposures to sediments in a recreational scenario will be re-evaluated based on the current and potential future recreational activities at the Site.

18. Trespasser exposures were not evaluated in the draft HHRA report as proscribed in the RI Work Plan. The RI Work Plan stated that the health risks for trespassers would be evaluated for gaining entry to the Waste Water Treatment Plant (WWTP) and being exposed, via ingestion, inhalation, and dermal contact, to contaminated groundwater that has infiltrated into the lower portions of the facility. However, the draft HHRA report only addressed the issue of trespassers as those coming in contact with contaminated groundwater at the former seep area, and concluded that since there was an interim response at the seep area in 2002, the trespasser "exposure pathway is no longer complete and was not quantitatively evaluated in the HHRA." The failure to evaluate the trespasser's health risks at the WWTP is a shortcoming of the draft HHRA report.

Response

The report will be revised to address risks for trespassers potentially associated with exposures to groundwater at the former WWTP.

19. For the receptors "Construction Workers" under the "Industrial/Commercial Land Use Scenario," they were not adequately assessed in the draft HHRA report. The RI Work Plan and draft HHRA report stated, "It is conservatively assumed that construction activities could take place at every area in (the) evaluation" including ingestion, inhalation, and dermal contact. However the report did not examine exposures via

certain media and also omitted key exposure factors in the estimation of risks for Construction Workers coming in contact with affected media at the site. This could result in an underestimation of risks.

In the draft HHRA report, dermal risk calculations related to PAHs (polycyclic aromatic hydrocarbons) in sub-surface were not conducted for Construction Workers (Attachment D, Table 20a), however, dermal risks were calculated for maintenance workers for carcinogenic PAHs (Attachment D, Table 17a). The cancer slope factor for the carcinogenic PAHs were included in Table 17a, but in Table 20a were noted as "No Value available," resulting in missing dermal risk estimations for Construction Workers. One of the primary health concerns caused by direct contact with PAHs and coal tars is how they adversely affect the skin. Dermal contact with PAHs and coal tars are known to result in skin irritation, heighten dermal photo-toxicity, and increase risks of several skin cancers. Not evaluating dermal exposures to PAHs underestimates the health risks posed to Construction Workers.

The draft HHRA report also did not evaluate any health risks to Construction Workers related to exposures with shallow groundwater at Kreher Park. The report designated 10 feet as the maximum depth to which sub-surface soil data would be excavated by those working on utilities. However, sub-surface soil investigations in Kreher Park of often encounter groundwater at depths of 3 to 5 feet. Additionally, it is common for odorous oily sheens, slicks, tars, and NAPLs to be present in shallow on-site groundwater (as described in Table 2-1 and soil boring logs in Appendix B3 of the draft RI report). Consequently, not evaluating the health risks for Construction Workers for exposures to contaminated groundwater is a shortcoming in the draft HHRA report.

Response

Risk calculations for construction workers will be revised to include a qualitative characterization of risks following dermal exposures to PAHs. This approach is consistent with the technical guidance provided in Risk Assessment Guidance for Superfund (RAGS), Part A (USEPA, 1989) and Part E (USEPA, 2004). A quantitative evaluation of risks associated with dermal exposure to PAHs is not feasible because the current default approach for deriving dermal toxicity criteria necessary for a quantitative characterization (i.e., extrapolating a dermal toxicity criterion by adjusting the oral criterion with an oral absorption factor) is not applicable for chemicals, such as PAHs, that cause effects at the points of entry

It is unlikely for workers to come into contact with groundwater when performing construction/excavation activities because groundwater is typically removed from the excavated area, if encountered, to reduce the risk of slip, trip or fall. Therefore,

construction worker exposure to groundwater was not quantitatively evaluated in the HHRA.

Specific Comments

1. Section 2.0: The narrative states in section 1.2 that historical data was used to complete the HHRA. Where is past data included in the calculations?

Response

Information regarding data used to develop the HHRA for each exposure scenario (e.g., sample ID, sample collection date and sample depths) is presented on Tables 1 through 9.) Tables 8 & 9 will be revised to clearly indicate sample date.

2. Section 2.3.2, page 2-6: Ensure that risk-based screening levels obtained from all sources are based on a target cancer risk of 1E-06.

Response

Comment noted. All risk-based screening levels used for identifying COPCs are based on a target cancer risk of 1E-06 (for carcinogenic effects) and a target hazard quotient of 0.1 for noncarcinogenic effects.

3. Section 2.3.2, page 2-6: Selection of Risk-based screening concentrations (RBSCs) for cesium-37 and lead-210 is discussed in this section, however, beyond this presentation and a toxicity profile for Cs in Attachment A, no risk evaluation of Cs-37 or Pb-210 is performed in this document.

Response

The report will be revised to clarify that cesium-37 and lead-210 were not identified as COPCs because they were detected at levels below the risk-based screening criteria.

4. Section 3.1.4.4: Ingestion of surface water and suspended sediments was not evaluated for the swimming and wading scenario, however, these are often included in exposure assessments as the definition of primary contact includes "the possibility of ingestion". Please include more discussion of why the ingestion pathway was not included in the calculations of risk.

Response

As indicated in Response to General Comment 11, no COPCs were identified in surface water. Therefore, ingestion of surface water was excluded form the quantitative risk evaluation.

Risks potentially associated with the pathway of incidental ingestion of sediment are presented on Tables 24 (adult swimmer), 25 (adolescent swimmer), 26 (adult wader) and 27 (adolescent wader).

5. Section 3.1.4.5: There are likely other subsistence fish consumers in the area outside of the Tribal members.

Response

We are unaware of other regular subsistence fishers in the area. Please provide this information so it can be considered for inclusion in the evaluation.

6. Section 4.3, page 4-2: The receptor groups that subchronic Reference Doses (RfDs) were used for should be listed and the risk calculation tables should indicate when subchronic RfDs were used.

Response

The report will be revised accordingly.

7. Section 4.5, page 4-4: Provide the site-specific input parameters used in the Adult Lead Model (ALM). Also, lead concentrations up to 4000 mg/kg have been measured in soil in the residential dataset. Possible hotspots of lead contamination should be evaluated in the risk characterization as averaging lead concentrations over a large area can dilute the exposure concentration.

Response

The report will be revised to clarify that all input parameters used in the ALM were default parameters for the most sensitive receptor in an industrial setting (i.e., fetuses born to female workers who work at an industrial facility for 219 days/year).
The use of an arithmetic mean concentration, instead of a 95% UCL that is typically used for other chemicals, as the EPC for lead, is consistent with the current technical guidance provided by the USEPA for characterizing potential health risks following exposures to lead. Hotspot analysis will not be performed because potential receptors

are likely to be exposed to various portions of the site throughout the duration of exposure, and not just be exposed to the location with the maximum concentration.

8. Section 5: The exposure assessment indicates that risks for residential receptors will be quantified using three Exposure Point Concentrations (EPCs) – surface and subsurface soil, and 0-3 ft. soil. Risks for all three EPC scenarios should be presented in the risk characterization. Also, the Attachments D, E, and F should list the EPC used. Please check the EPCs used in Attachment D for the resident. For example, the EPC for arsenic was 5.62 mg/kg; however, in Table B1, the residential EPC for arsenic is 5.34 mg/kg.

Response

The report will be revised to (1) present estimated risks for all three residential scenarios; (2) present EPCs used in Attachments D, E and F; and (3) ensure that EPCs used in Appendices D, E and F are consistent with EPCs derived in Appendix B2.

9. Section 5: Risk summaries should be provided for all receptors, as a risk manager may also decide that a baseline risk level less than 10^{-4} is unacceptable due to site specific reasons and that remedial action is warranted@ (U.S. EPA, April 22, 1991. *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions* (OSWER DIRECTIVE 9355.0-30).

Response

The report will be revised to present risk summaries for all receptors.

10. Section 5.1 Summary RME Table: The narrative should include language explaining why surface water is not a column in this table. The narrative should also include explanation of which fish sample location results were included in risk calculations. Fish sample locations were not mapped in Figure 5.

Response

A footnote will be added to the RME summary table in Section 5.1 to indicate that no COPCs were identified in surface water.

Section 5.1 will be revised to indicate that fish sample location results evaluated in the HHRA are presented on Table 9.

11. Section 5.2: As shown in Table 20, other noncarcinogenic risk drivers for

residents are naphthalene, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and benzene. All have Hazard Quotients (HQs) greater than one for the inhalation exposure route.

Response

Section 5.2 will be revised to include detailed discussion of the primary risk driver for residents.

12. Section 5.2.2 of HHRA and 7.5.1 of RI/FS: Maximum concentrations of benzene (230 mg/kg) and benzo(a)pyrene (340 mg/kg) in the 0 to 3 ft bgs depth and 3000 mg/kg in the 3 to 5 ft bgs suggest hotspots of contamination that should be evaluated separately in the risk assessment. The use of a 95% UCL can dilute out these concentrations, resulting in an underestimation of risk.

Response

The USEPA guidance regarding the concentration terms for the purpose of characterizing risks potentially posed by a site is to select concentrations that are representative of average concentrations receptors may be exposed to over time. The use of a 95%UCL, which represents a conservative, upper-bound estimate of an average concentration, is therefore consistent with the current USEPA guidance.

13. Section 6.1.1: The residential risk for the 0-10 foot zone should also be presented in this table. Description of risk as Aacceptable@ should not be presented in a risk assessment. Determinations of whether risk is acceptable or unacceptable should be left to the risk manager. Please remove the term Aacceptable@.

Response

The report will be revised to (1) present the residential risks potentially associated with chemicals detected in the 0-10 foot; and (2) remove the term "acceptable".

14. Section 6.2.4: There were very few samples of sediment and air sampled. Unless there is reason to believe the sample collection was very biased, using the maximum concentration as the EPC may overestimate or underestimate risk. An uncertainty analysis should describe assumptions that will both over and underestimate and not only focus on those that will overestimate risk.

Response

Section 2.1.3 of the RI report includes data/discussion on the two rounds of vapor samples collected from the upper bluff. There were 10 soil probe locations including one with three and one with two probes. Several of these probes were located outside the filled ravine to evaluate potential soil-vapor migration. Two rounds of indoor air samples were also collected from one location inside the NSPW service center.

Section 2.1.4 of the RI report includes discussion of the sediment sampling activities that were completed as part of the RI to supplement historical data.

Section 6.2.4 of the HHRA report will be revised to include discussion concerning assumptions that may both over- and underestimate risks.

15. Table 11: The residential Preliminary Remediation Goals (PRGs) should be used to screen COPCs for recreational land use, since children are considered as a recreational user.

Response

The HHRA will be revised to use residential PRGs for the purpose of identifying COPCs for recreational land use.

16. Table 20: When the Hazard Index (HI) exceeds one, the HI should be recalculated by target organ/critical effect.

Response

The HI will be recalculated by target organ, as suggested.

17. Attachment A: Provide a citation for the criteria used to define a volatile compound.

Response

Chemicals with a Henry's Law constant greater than $1x10^{-5}$ atm-m3/mole and a molecular weight of less than 200 grams/mole is defined as a volatile organic compound in the following documents:

- *Risk Assessment Guidance for Superfund: Volume 1-Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals). December 1991. USEPA.*

- *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. December 2002. USEPA*

18. Attachment A, Table 8: Provide the sediment ingestion rate for an adolescent as was provided for an adult.

Response

The basis for the sediment ingestion rate for an adolescent will be provided as suggested.

19. Attachment A, Table 11: The table appears to be mislabeled; the parameters presented are for a construction worker.

Response

Attachment A, Table 11 will be corrected as suggested.

20. Attachment B1 and B2: For ease of review, the soil zone and the areas/media for each EPC table and Pro-UCL output should be labeled. The sample location for the maximum detected concentrations and the range of detection limits should be provided in the exposure point concentration summary tables.

Response

Attachment B will be revised as suggested.

21. Attachment D: The methods for developing a Particulate Emission Factor (PEF) and a Volatilization Factor (VF) for a commercial/industrial worker and a construction worker presented in EPA (2002) *Supplemental Soil Screening Guidance* (OSWER 9355.4-24) should be used to develop these parameters for the maintenance worker, commercial/industrial worker and construction worker. Using a default PEF and VF does not account for mechanical disturbances (e.g., traffic, grading) that could lead to greater emissions than the default. Note that time interval (T) will change for both the RME and CT estimates of VF and the Q/C will change depending on the receptor and source size. The VF for the residential and recreational receptors also needs to be revised because the time interval needs to be equivalent to the ED. Provide the reference and calculations for the Q/C value selected for Minneapolis.

Response

The report will be revised to calculate site-specific PEF values for industrial/commercial and maintenance workers and VF values for industrial/commercial, maintenance and construction workers.

However, default PEF values will continue to be used for construction workers due to the lack of information necessary for deriving a site-specific PEF; e.g., number and weight of heavy vehicles that will be used, the distance vehicles will travel and traffic patterns.

22. Attachment D, Summary Tables for receptors and calculations in general: Were the detected concentrations for the wading beach and on-site sediment values compared to the results of the reference site samples to generate a different set of COPCs? The text needs more narrative explanation of why risk was only calculated for the swimming beach off-site and not the on-site sediments and water.

Response

The report will be revised to (1) clarify concentrations of surface water and sediments were not screened against the results of the reference sites; and (2) justify criteria used for selecting sample locations to be evaluated in the HHRA.

23. Attachment D, Table 30b: The intake equation is incorrect. The VF and PEF terms are not needed when air concentrations are available.

Response

This table will be revised to remove the VF and PEF terms. The calculated values remain the same because, as indicated by the calculation sheet presented on Table 30b, these two terms were not incorporated into the calculations.